Minnesota Board of Water & Soil Resources

MnRAM - Use in Water Plans

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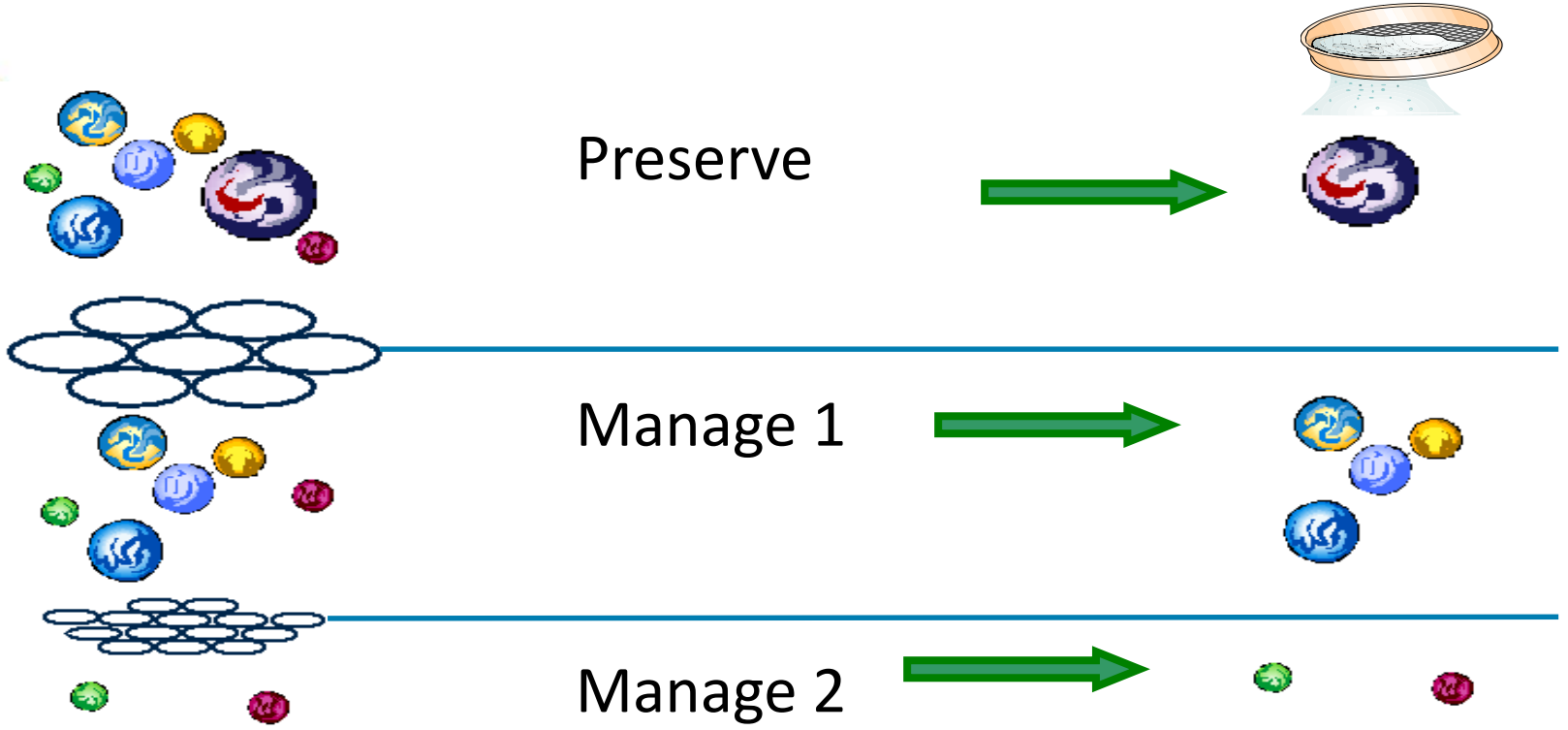
Hermantown Wetland Plan

Wetland Mitigation is Based on:

- ***Timing*** **of Mitigation**
- ***Location*** **of mitigation**
- ***Type*** **of wetland mitigation**
- ***MnRAM analysis*** **of function of impacted wetland**

Replacement ratio varies based on these factors

Management Classification helps Sort Wetlands




Hermantown used MnRAM Management Classification to
help determine replacement ratios
Higher functioning wetlands = higher replacement ratio

Hermantown Mitigation Ratios

Location	Type	Timing	Preserve	Manage 1	Manage 2	Manage 3
			HIGHEST			LOWEST
IN-PLACE	IN-KIND	IN-ADVANCE	2.5:1	2:1	1.5:1	1:1
		NOT IN-ADVANCE	FUNCTIONING	2.25:1	1.75:1	FUNCTIONING
	OUT OF KIND	IN- ADVANCE	WETLANDS =	2.25:1	1.75:1	WETLANDS =
		NOT IN-ADVANCE	3:1	2.5:1	2:1	1.5:1
			HIGHEST			LOWEST
NOT-IN-PLACE	IN-KIND	IN- ADVANCE	2.75:1	2.25:1	1.75:1	1.25:1
		NOT IN-ADVANCE	REPLACEMENT	2.5:1	2:1	REPLACEMENT
	OUT OF KIND	IN- ADVANCE	3:1	2.5:1	2:1	1.5:1
		NOT IN-ADVANCE	RATIO	2.5:1	2:1	RATIO
			(Up to 3:1)			*(As low as 1.5:1)*
			3:1	2.5:1	2:1	1.5:1

Project Assessment of Wetland Mitigation

- **MnRAM can be used to *assess functions of wetland impact sites***
- **May have some utility for *assessing proposed wetland replacement sites.***
- **ANY PREDICTIONS OF WETLAND FUNCTIONS OF WETLAND REPLACEMENT SITE *MUST BE REALISTIC*!!! *(Not realistic to propose end product of an exceptional wetland – goal of medium functions is more do-able)***

Otter Creek Impact Site

Function	Score	Rating
Vegetative Diversity/Integrity	2.00	Exceptional
Hydrology (Characteristic)	1.00	High
Flood Attenuation	0.60	Medium
Water Quality - Downstream	0.81	High
Water Quality - Wetland	1.29	Exceptional
Shoreline Protection	0.82	High
Wildlife Habitat Structure	1.17	Exceptional
Maintenance of Fish Habitat	1.12	Exceptional
Maintenance of Amphibian Habitat	0.10	Low
Aesthetics/Recreation/Education	2.00	Exceptional
Commercial Use	N/A	N/A

Replacement Site: *Is it Adequate?*

Function	Score Impact	MnRAM Rating Impact Site	MnRAM Rating Replacement Site
Vegetative Diversity/Integ.	2.00	Exceptional	Medium
Hydrology (Characteristic)	1.00	High	High
Flood Attenuation	0.60	Medium	Medium
Water Quality - Downstream	0.81	High	High
Water Quality - Wetland	1.39	Exceptional	Medium
Shoreline Protection	0.82	High	N/A
Wildlife Habitat Structure	1.17	Exceptional	High
Maintenance of Fish Habitat	1.12	Exceptional	N/A
Maintenance of Amphibian Habitat	0.10	Low	Low
Aesthetics/Recreation/Educ.	2.00	Exceptional	Low
Commercial Use	N/A	N/A	N/A

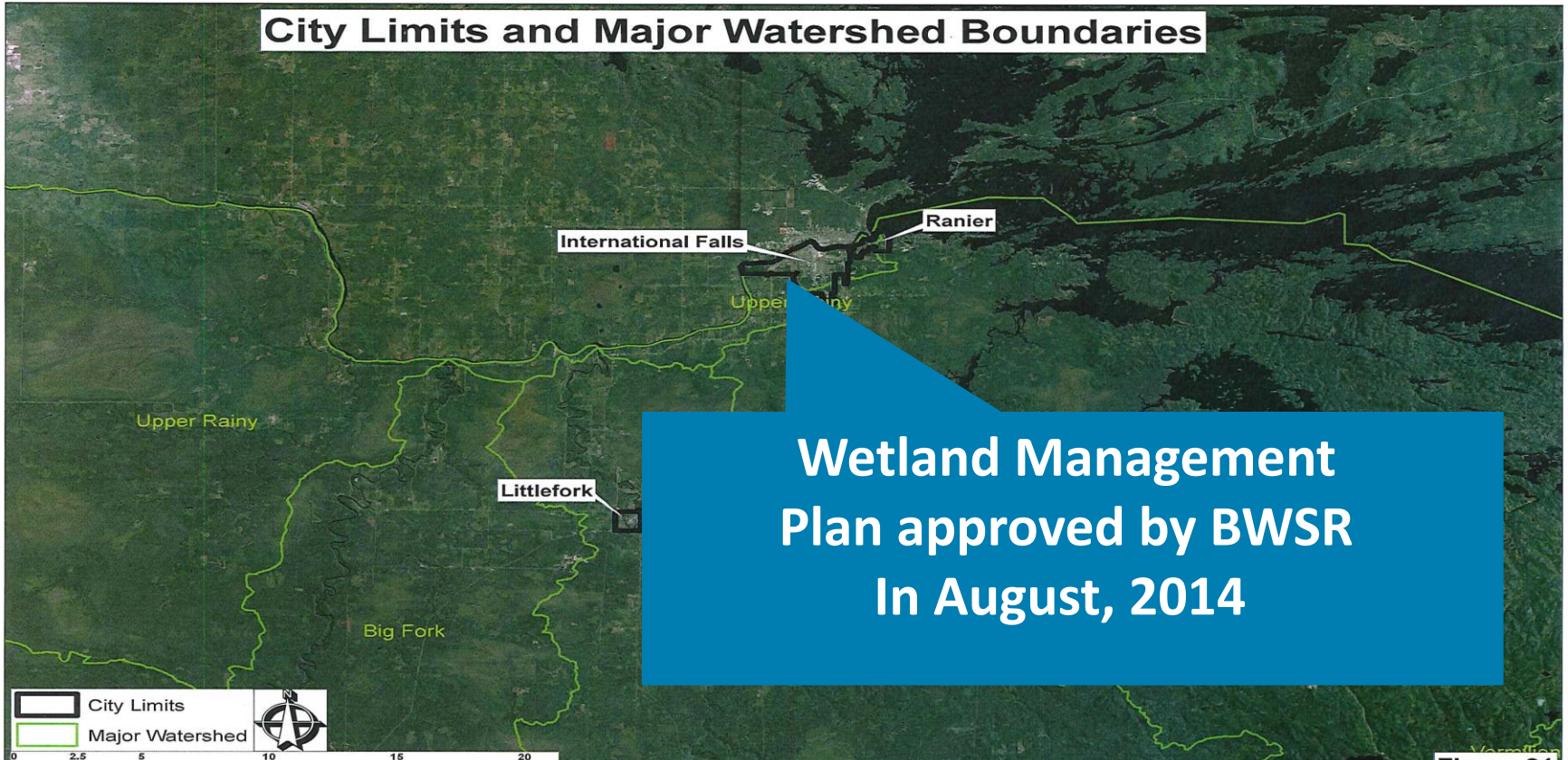
FIVE WETLAND FUNCTIONS AT WETLAND MITIGATION SITE ARE LOWER THAN THE IMPACT SITE

Is this mitigation acceptable?

Who decides?

Who makes a technical recommendation?

City of International Falls

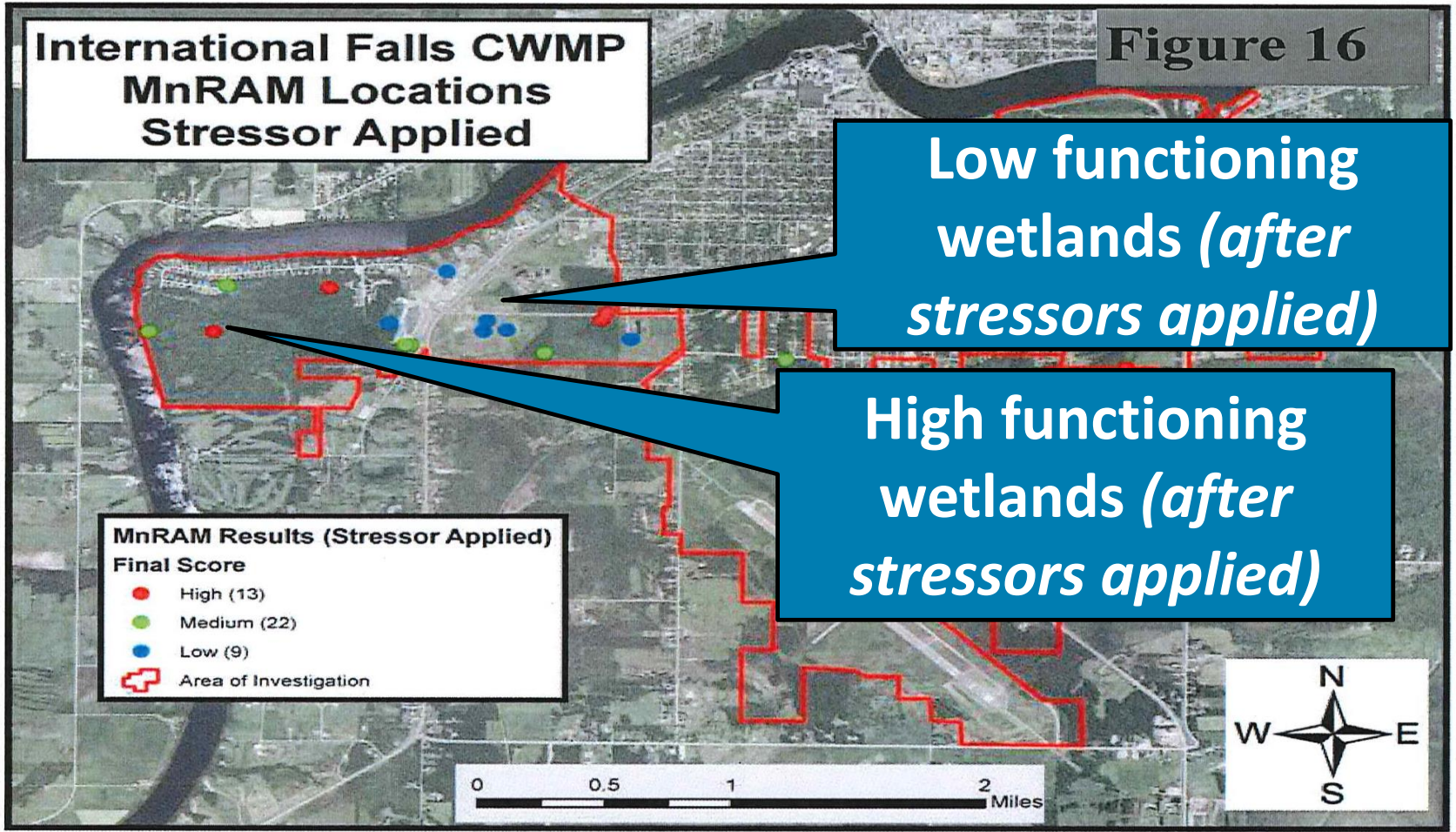


I. Falls – MnRAM Modified

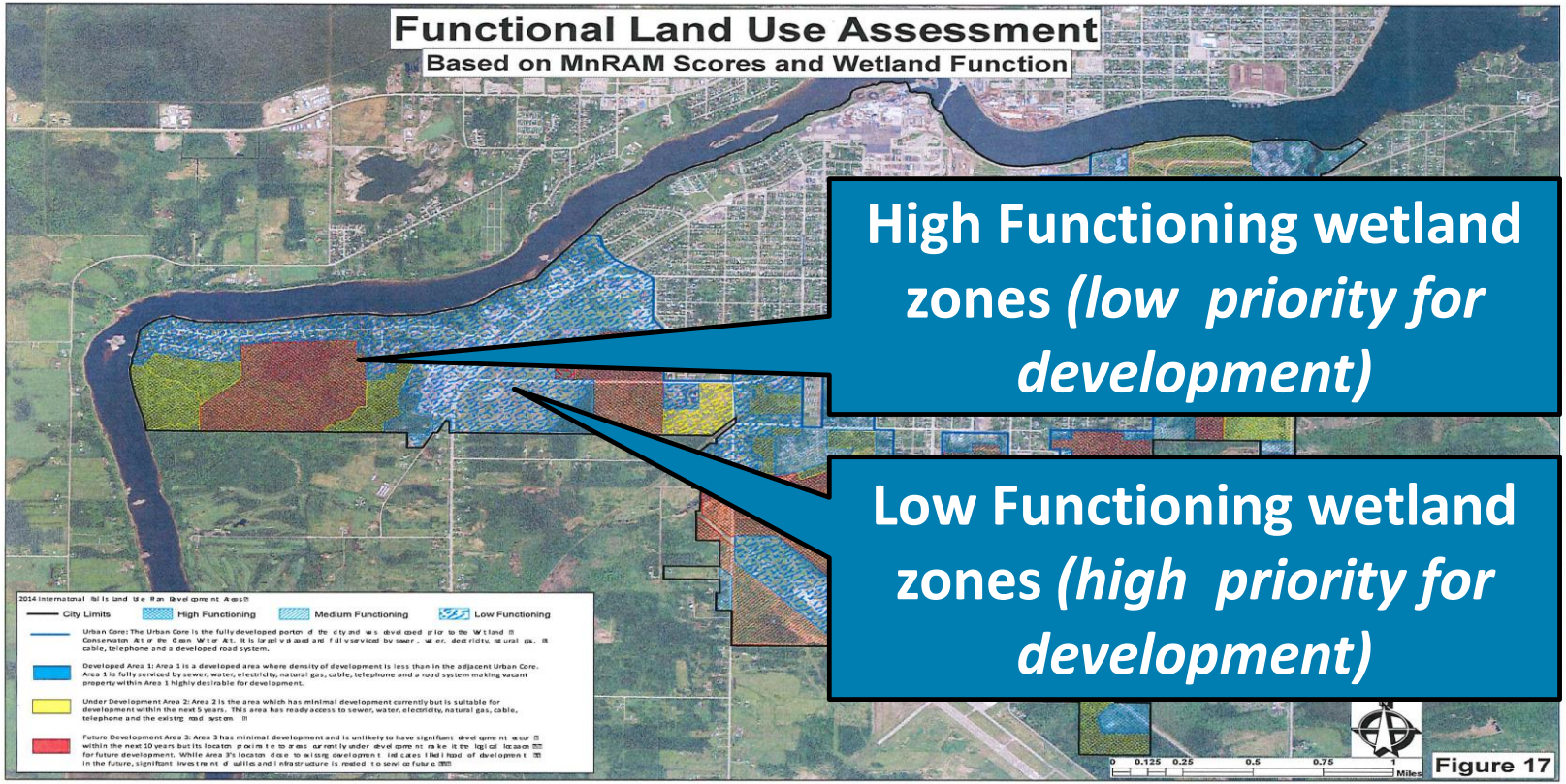
- **MnRAM results in Int'l. Falls did not have much differentiation – *many wetlands had similar scores***
- **Concept of *"Stressors" was added* to help separate or differentiate wetland scores**
- **Used 4 MnRAM questions related to "*human disturbance"* as basis for "Stressor" scoring**

I. Falls – MnRAM Modified -
Added weight to 4 MnRAM Questions:

1. **Upland Conditions** ***(MnRAM Question #14)***
2. **Storm water Runoff** ***(MnRAM Question #20)***
3. **Buffer Width** ***(MnRAM Question #23)***
4. **Human disturbance** ***(MnRAM Question #53)***


International Falls CWMP
MnRAM Locations
Stressor Applied
Figure 16
Low functioning wetlands *(after stressors applied)*
High functioning wetlands *(after stressors applied)*
MnRAM Results (Stressor Applied)
Final Score
High (13)
Medium (22)
Low (9)
Area of Investigation
0
0.5
1
2
Miles
N
W
E
S

Functional Assessment

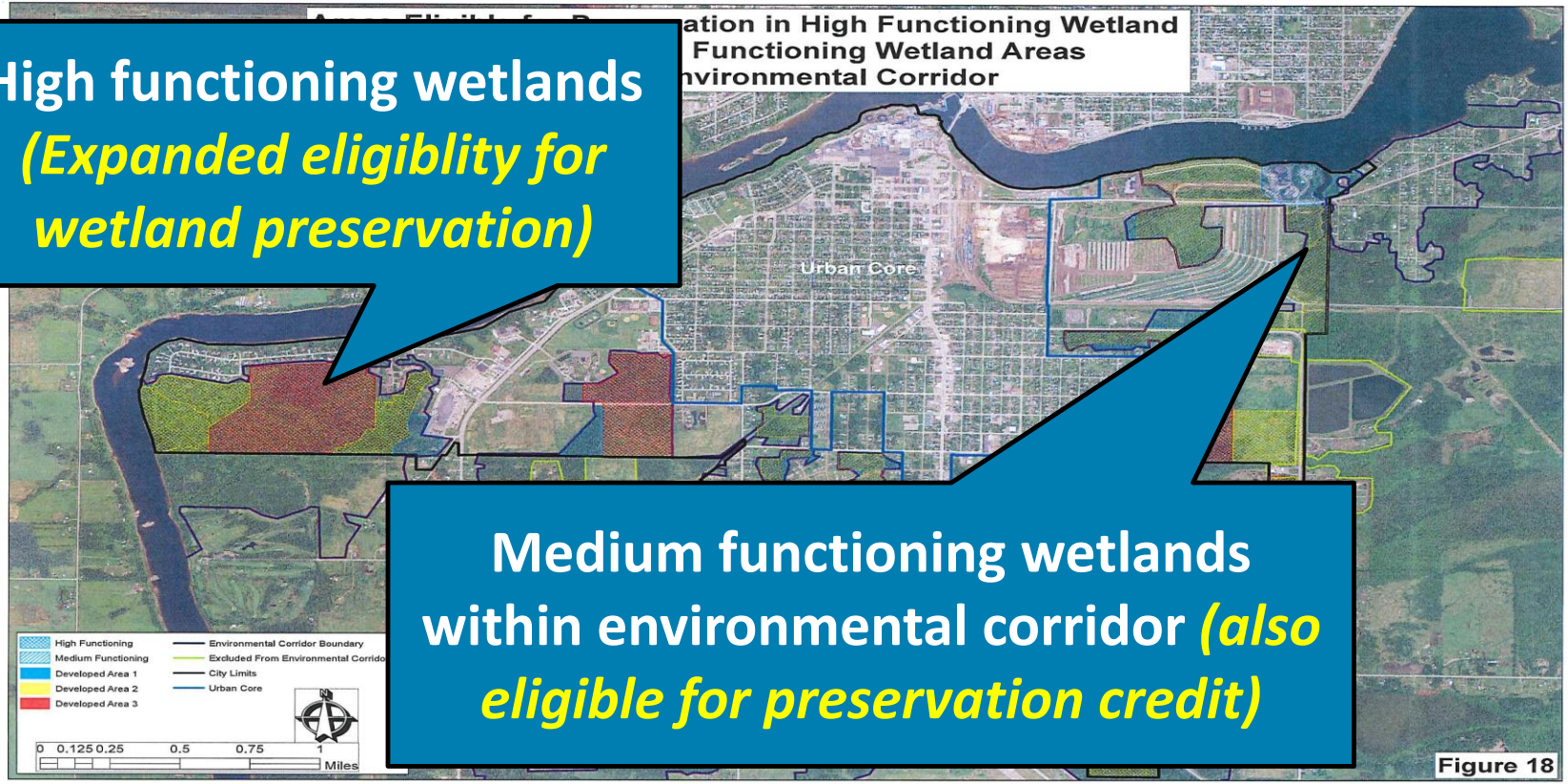


High Functioning wetland zones *(low priority for development)*

Low Functioning wetland zones *(high priority for development)*

Areas Eligible for Preservation Credit

High functioning wetlands ***(Expanded eligiblity for wetland preservation)***



Medium functioning wetlands within environmental corridor ***(also eligible for preservation credit)***

Summary:

- 8420 references wetland functions in multiple places
- MnRAM can be useful tool in local wetland plans
- Assessment of wetland functions helps us evaluate impacts and replacement
- Wetland functions should be assessed individually (*do not average scores*)
- Management classification system is a way to use MnRAM results to manage wetlands based on individual functions

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Questions?